



Peat and the gardener

SUMMARY The Royal Horticultural Society shares public concern in reducing peat use to minimise the effects of global peat extraction on peat bog habitats. Many viable peat alternatives exist which are either completely peat-free or of reduced peat content. With improved labelling and information on packaging, gardeners will be able to make more informed decisions about peat alternatives. The RHS aims to transfer 90% of its own growing media requirements to peat alternatives by 2010.



Peat harvesting on a large scale

Photo: RHS Wisley: Mike Pollock

RHS policy statements

- 1 The RHS shares public concern about the effects of global peat extraction on wildlife habitats and fully endorses the need for strong protection of peat bog habitats.
- 2 The RHS promotes the use of sustainable peat alternatives by gardeners. We aim to transfer 90% of growing media requirements within our own gardens to peat alternatives by 2010.
- 3 The RHS supports and encourages studies into the use of peat alternatives, believing that while viable alternatives are currently available for the majority of growing media uses, there is a need for further research and development into sustainable peat replacements.
- 4 The RHS gives guidance on the use of alternative growing media products instead of peat where results are comparable.
- 5 The RHS considers the purchase of peat to be unacceptable for the primary use of soil incorporation and ground mulching; the RHS does not use peat as a soil improver or mulch in its gardens. At its flower shows it actively encourages the use of alternatives for staging purposes, with a view to eliminating peat use for staging.
- 6 The RHS would like all retail outlets that stock peat for horticultural purposes to offer gardeners the choice of peat-free alternatives from sustainable sources. Plant Centres run by RHS Enterprises stock alternative, peat-free products that are clearly identifiable and at a competitive price.
- 7 The RHS would like clearer labelling of growing media, their composition and instructions for use, enabling gardeners to make an informed choice.

Peat and the gardener

What is peat?

Peat is made of incompletely decomposed plant remains, mainly sedges, grasses, reeds and mosses. It forms when the natural processes of decay are arrested by waterlogging and the exclusion of oxygen, with the remains of succeeding wetland plants becoming compacted to form peat. It is a slow process with the layer of peat increasing by an average rate calculated to be no more than 1mm depth per year. It is used in horticulture for its unique characteristics that make it an ideal growing medium.

Where does it come from?

Existing peatlands cover about 4 million km² of the land and freshwater surface of the planet and are found throughout the world. Currently though, peat formation is occurring mainly in the northern temperate zone.

In the United Kingdom peatlands cover 1.6 million hectares, 95% of which is upland blanket bog and the remainder is lowland raised bog. Not all peat types are suitable for commercial extraction and it is the

lowland raised bog, composed of deep sphagnum moss peat, that gives rise to most of the product destined for horticulture. Of the 70,000 hectares of lowland raised bog in the UK, estimates suggest that only 3,800 – 8,000 hectares remain in pristine or near-natural condition.

Suitability for commercial extraction is determined by many factors, such as its proximity to market, ease of access to the peat itself and peat quality. It is these factors which make lowland raised bogs attractive to commercial extraction operations. It is also for these reasons that the global volume of peat suitable for commercial extraction is much lower than the figures presented as the remaining peat reserves; replenishment figures have to be looked at closely. Global replenishment rates are based upon the global peat reserves and not the reserves that are commercially extractable. Peat that is growing beyond commercial reach cannot be said to replenish a renewable resource (Schilstra, 2001). According to the Environment Agency, “over human timescales, the loss of peat is

irreversible due to the slow rate of natural regeneration”.

Peat extraction and use

The effects of extraction are irreparable as peatlands take thousands of years to form. Reclamation schemes at previously worked sites have succeeded in creating attractive wetland areas, but they have not recreated peatlands. Peat forms at a rate of only 1mm per year, whilst peat extractors remove up to 22cm a year. A 10m deep peat reserve, which took around 10,000 years to form, will be cleared in less than 50 years. Bearing these timescales in mind, it is impossible to illustrate rehabilitated and restored peatlands. Even if peatlands could be restored, it is important to remember that preservation is cheaper than restoration.

Defra (Department for Environment, Food and Rural Affairs) estimate that 2.69 million m³ of peat is used in the UK annually, of which 99% is used as growing media and 63% of which is used by gardeners. Sixty two percent of all peat used in the United Kingdom is imported from other countries, incl. the Republic of Ireland and the Baltic states (Defra, 2008).

Importance of peatlands

Peatlands are important for four main reasons. Firstly they form a unique natural habitat that supports important biodiversity and species at risk (plants, birds and insects). Secondly, peatlands are an important carbon sink, they contain one third of the world’s soil carbon. This carbon pool exceeds that of the world’s forests and equals that of the atmosphere. The removal of peat not only leads to the release of this carbon but also removes the carbon

English Nature: Peter Roworth ARPS



An undamaged peat bog

sink, exacerbating global warming and climate change. Thirdly, they contain vital geochemical and palaeological archives offering unique historical evidence on the area and its inhabitants. Finally, they play an important role in the global hydrological cycle helping maintain both water quantity and quality: they contain 10% of global freshwater resources. In the UK peatlands are thought to play an important role in flood prevention.

Legislation

The UK Government has established targets for peat use reduction. Major retailers (e.g. B&Q, Homebase, Focus and Marks and Spencer) have sought to match or better these targets. It is hoped that such leadership will encourage commercial nurseries away from using peat.

The Growing Media Initiative (GMI), a scheme involving the Horticultural Trades Association, the Growing Media Association, retailers, Defra, the RSPB and the RHS, has been developed to help the horticultural industry in the UK meet government targets for the reduction in peat use.

The European Union shares concern about peatland preservation. Most peatlands are now so rare that they are being designated as Special Areas of Conservation and member states are required to protect them. The EU also advocates the view that preservation is cheaper than restoration. Outside the EU, the special conservation status of peatlands is increasingly recognised, though with variable legislative effectiveness.

Alternatives to peat

Peat alternatives are now being developed using materials such as bark, wood chip, coir, biosolids, bracken and green waste. Many of these alternatives work well in certain circumstances, (e.g. coir-based products are regarded as particularly good for propagation). The development of growing media now focuses on specific purposes, like propagation. Due to the inherent differences between media, product development will take time and gardeners have to be aware that there may be different management requirements associated with all of the different products. Several decades of research went into the perfection of horticultural techniques using growing composts with high-grade peat as the sole or major ingredient. Similarly, it will take time to adjust to using peat alternatives.

Many of the alternatives are made from locally collected 'waste' material, which is processed and used as a growing media locally. By supporting the development of local environmentally-friendly peat alternatives, as an alternative to foreign peat extraction, we are benefiting a number of UK industries (eg. forestry, water, composting etc).

The environmental impact of transport is also reduced.

Some plant groups (eg ericaceous plants), and growing media formulations (eg multi-purpose

compost), offer a greater challenge to the development of peat alternatives. Many alternatives are alkaline, making them unsuitable for ericaceous plants that require an acidic medium. The differing nutrient concentrations also make it difficult to develop a multi-purpose compost suitable for the wide range of plants traditionally grown in such products. As an important first step, many growing media producers have developed mixes containing reduced volumes of peat. The phasing out of peat in this manner should enable manufacturers to maintain the quality of products available.

RHS comparative demonstrations

The RHS has undertaken a number of comparative trials at its gardens on peat and peat alternatives. A wide selection of materials (including bark, wood waste, coir, green waste and biosolids) has been assessed for the cultivation of a range of ornamentals and vegetables in different situations. The demonstrations have provided first-hand information on the benefits and challenges of different products, showing that the majority of plants grown in peat alternatives are comparable to those grown in peat.

The demonstrations have also shown that peat alternatives should not be treated in the same way as peat. Some products have been found to be plant specific and gardeners should not assume that all plants will perform



A comparison of some popular ornamentals grown at Wisley in commercially available peat (left) and peat-free composts (right).

similarly. Other products have been seen to either promote or delay plant development, thus making plant management more complicated. When trying new composts gardeners should allow a period of familiarisation in order to obtain the best results. Read and follow closely any recommendations offered on the packaging on the type of plants they are best suited to, as well as the watering and feeding requirements.

Peat products were being developed for several decades before they were fully accepted. Peat alternatives will hopefully require less time as manufacturers are aware of the market available to the best peat alternatives. Regular re-examination of products is necessary as they are being continually improved.

Traditionally peat has also been used for soil improvement and ground mulching but other materials are better suited to these tasks than peat. Soil can be improved by incorporating well-rotted animal

manures or composted plant remains; both materials can also be used for mulching, along with wood chips, wood shavings, bark and other materials.

The following organizations are amongst those with a shared interest in the protection of peatlands as a wildlife habitat:

The Royal Society for the Protection of Birds, The Lodge, Sandy, Beds, SG19 2DL, tel 01767 680551; www.rspb.org.uk

The National Trust, Conservation Department, Heelis, Kemble Drive, Swindon SN2 2NA tel 01793 817400; www.nationaltrust.org.uk

Plantlife, 14 Rollestone Street, Salisbury, Wiltshire, SP1 1DX, tel 01722 342730; www.plantlife.org.uk

The Wildlife Trusts, The Kiln, Waterside, Mather Road, Newark, Notts, NG24 1WT, tel 01636 677711; www.wildlifetrusts.org.uk

Friends of the Earth, 26-28 Underwood Street, London, N1 7JQ, tel 0207 490 1555; www.foe.co.uk

Natural England, Northminster House, Peterborough, PE1 1UA, tel 0845 600 3078; www.naturalengland.org.uk

Countryside Council for Wales, Maes-y-Ffynnon, Penrhosgarnedd, Bangor, LL57 2DW, tel 0845 1306229; www.ccw.gov.uk

Scottish Natural Heritage, Silvan Hs, 3rd Floor East, 231 Corstorphine Rd, Edinburgh EH12 7AT tel 0131 3162300; www.snh.org.uk

Joint Nature Conservation Committee, Monkstone House, City Road, Peterborough, PE1 1JY, tel 01733 562626; www.jncc.gov.uk

Growing Media Initiative, The HTA, 19 High Street, Theale, Reading RG7 5AH tel 0118 930 3132 www.growingmediainitiative.org.uk

References

- Schilstra, A.J. (2001). How sustainable is the use of peat for commercial energy production? *Ecological Economics*, **39** 285-293.
- Defra. (2008). Monitoring of peat and alternative products for growing media and soil improvers in the UK 2007. Department for Environment, Food and Rural Affairs, London.

RHS Wisley



Trials at Wisley have compared peat alternatives in growing media



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